CLAIMS

1. A method of estimating the optimum service capacity at a specified quality of service (QoS) for the transmission of packets of data traffic of different characteristics, the traffic being described by a predetermined type of descriptor (D) to allow the calculation of the estimated bandwidth requirement (BWR) for that traffic, through a switch node comprising a buffer having a defined size (b), comprising at time intervals, carrying out the steps of:

   (a) configuring the service-capacity;

   (b) sampling the traffic;

   (c) extracting the descriptor (D);

   (d) calculating from the descriptor (D) the BWR for the configured service capacity;

   (e) using the calculated BWR to configure a new service capacity;

   (f) iteratively carrying out steps (b) through (e) until the calculated BWR and the configured service capacity coincide to provide a final service capacity; and

   (g) defining this final service capacity as the optimum service capacity for that traffic at that buffer.

2. A method as claimed in claim 1, in which the initial service capacity specified in step (a) is the previous optimum service capacity.

3. A method as claimed in claim 1 or 2, in which the traffic is continuously monitored so that if the nature of the traffic changes, a new optimum service capacity is calculated.

4. A method as claimed in any preceding claim, in which when the required target QoS changes from the target QoS initially set, the target QoS is reset and a new optimum service capacity is calculated.

5. A method as claimed in any preceding claim, in which step (a) is carried out within the jurisdiction and some or all of steps (b) to (g) are carried out outside the jurisdiction and the method further comprises using the optimum service capacity to control the transmission of the traffic through the switch node.

6. A method as claimed in any of claims 1 to 4, in which a sample of the traffic is received with step (a) being carried outside the jurisdiction and in which at least steps (c) to (g) are carried out within the jurisdiction.

7. A method as claimed in any of claims 1 to 4, in which the switch node is remotely located with respect to where the method is carried out, except for the downloading of data to and from the switch node.

8. A closed loop control system comprising a communications network in which are interconnected:-

user end systems for the delivery and reception of data;

a switch node incorporating at least one buffer;

means to configure a service rate; and

a programmable controller having means to carry out the method of any preceding claim.

9. A closed loop control system as claimed in claim 8, in which the controller is directly connected to a specific end user output source for the transmission of data to the switch node.

10. A computer program comprising program instructions for causing a computer to perform the method of claims 1 to 7 inclusive.

11. A computer program comprising program instructions for causing a computer to provide the means of claims 8 or 9.

12. A computer program as claimed in claim 10 or 11embodied on a record medium.

13. A computer program as claimed in claim 10 or 11, embodied in a computer memory.

14. A computer program as claimed in claim 10 or 11, embodied in a read-only memory.

15. A computer program as claimed in claim 10 or 11, carried on an electrical carrier signal.